NIGMANKHODZHAYEVA, M.S.; USMANOV, Kh.U.

Deformation of the cotton cellulose by stretching. Dokl.AN Uz. SSR no.4:35-38 '57. (MIRA 11:5)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Cellulose--Testing)

ABIDOVA, Z.Kh.; YAKUBOV, A.M.; USMANOV, Kh.U.; KHODZHAYEV, G.Kh.

Paper chromatography used for the separation and determination of aromatic acids. Dokl. AN Uz. SSR no.6:29-32 '57. (MIRA 11:5)

1. Institut khimii AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Acids) (Chromatographic analysis)

USMANOV, Kh.U.; NIGMANKHODZHAYEVA, M.S.

Mechanical properties of moist cellulose fibers. Izv. AN Uz. SSR Ser. khim. nauk no.1:41-47 '57. (MIRA 13:10)

1. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Fibers)

USMANOV, Kh.U.

Ten years of research on the cellulose of cotton fiber. Izv. AN Uz. SSR Ser. khim. nauk no.1:93-94 '57. (MIRA 13:10)
(Uzbekistan--Cellulose) (Uzbekistan--Cotton)

USMANOV, Kh. U., YAKUBOV, A.M.

Distribution of trace elements in the cotton plant.
Trudy Sred.-Az. politekh.inst. no.3:5-17 '57. (MIRA 13:6)
(Trace elements) (Cotton)

USMANOV, Kh.U.; LYUTOVICH, A.S.

Heat of wetting and the thermodynamic properties of silk and synthetic polyamide fiber. Dokl. AN Uz. SSR no.7:27-31 '57.
(MIRA 11:5)

1.Institut khimii rastitel'nogo syr'ya i khlopka AN UzSSR.
2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Silk) (Textile fibers, Synthetic) (Heat of wetting)

USMANOV, Kh.U.; YAKUBOV, A.M.

Microelements in cotton. Dokl. AN Uz. SSR no.9:37-39 '57.
(MIRA 11:5)

1.Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina.
2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Cotton) (Biosynthesis) (Plants--Chemical analysis)

USMANOV, Kh. U.

KARGIN, V.A.

USMANOV Kh. U.

5(3) p4 PHASE I BOOK EXPLOITATION SOV/1589

Akademiya nauk SSSR.

Khimiya bol'shikh molekul; sbornik statey (Chemistry of Large Molecules; Collection of Articles) Moscow, Izd-vo AN SSSR, 1958. 299 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 30,000 copies printed.

Compiler: G.V. Sklovskiy; Resp. Ed.: A.V. Topchiyev, Academician; Ed. of Publishing House: V.A. Boyarskiy; Tech. Ed.: I.N. Guseva.

PURPOSE: This book is intended for a wide circle of readers including those who have had no training in chemistry. It can also serve as a manual for propagandists, teachers, and journalists.

Chemistry of Large Molecules (Cont.) SOV/1589

COVERAGE: This collection of articles reflects the trend for the future development of the Soviet chemical industry as indicated by the May plenary session of the Central Committee of the Communist Party within the framework of the new Seven Year Plan. These articles were published in newspapers and journals. The authors, scientists and industry workers, developed the theme of accelerated development of the chemical industries, and sciences, with stress on the manufacture of synthetic fibers, plastics, and other materials. Some of the articles were abridged, revised, or enlarged. The articles were selected so as to give an adequate survey of the chemistry and technology of high-molecular-weight compounds and their use in industry, agriculture, and in the manufacture of consumers' goods. Mentioned are raw materials for the production of polymers. This book belongs to the popular-science series of the Academy of Sciences. Similar volumes are intended for future publication. No references are given.

TABLE OF CONTENTS:

Chemistry of Large Molecules (Cont.) SOV/1589

Card 7/8

USMANOV, Kh.U.; SADOVNIKOVA, V.I.; KOZIN, G.M.

Purification of cotton cellulose. Uzb. khim. zhur. no.2:21-28 '58.
(MIRA 11:8)

1.Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Cellulose)

USMANOV, Kh.U.; GAFUROV, T.G.

Chemical analysis and the prospects for the utilization by national economy of cellulose waste products. Uzb. khim. zhur. no.3:43-49 '58. (MIRA 11:9)

1.Institut khimii rastitel'nykh veshchestv AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Gafurov)
(Waste products) (Cellulose)

USMANOV, Kh.U.; YUL'CHIBAYEV, A.A.

New calorimeter of shottky type for measuring the heat of wetting of fibrous materials. Uzb. khim. zhur. no.4:15-19 '58.
(MIRA 11:12)

1.Chlen-korrespondent AN UzSSR (for Usmanov). 2. Sredneaziatskiy gosudarstvennyy universitet imeni V.I. Lenina.
(Heat of wetting) (Calorimeters)

USMANOV, Kh.U.; SHATKINA, V.P.

Cellulose accumulation in the cotton fiber as affected by seeding time. Dokl. AN Uz.SSR no.5:27-30 '58. (MIRA 11:8)

1. Institut khimii rastitel'nykh veshchestv AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cotton) (Cellulose)

USMANOV, Kh.U.; SHATKINA, V.P.

Effect of the time of defoliating cotton on the synthesis of cellulose in cotton fiber. Uzb.khim.zhur. no.5:31-37 '58. (MIRA 12:2)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.

(Cellulose) (Cotton)

USMANOV, Kh.U.; GAFUROV, T.G.

Chemical method for delinting cotton by means of wetting agents.
Uzb.khim.zhur. no.5:39-43 '58. (MIRA 12:2)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Cottonseed)

USMANOV, Kh.U.; TILLAYEV, R.S.; MIRSALIKHOV, M.

Variations in the polymerization degree of cellulose in the cotton fiber as related to insolation. Dokl. AN Uz. SSR no.8:17-19 '58. (MIRA 11:9)

1.Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina.
2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Polymerization) (Plants, Effect of light on)

USMANOV, Kh.U.; GAFUROV, T.G.

Physical and chemical characteristics of cotton linters removed by chemical means. Dokl.AN Uz.SSR no.9:19-22 '58.
(MIRA 11:12)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Linters)

USMANOV, Kh. U.

"The tasks of Usbekistan scientists in connection with the rich supply of cellulose and natural gases"

report presented at the cession of the Presidium of the Council for Co-ordination of Scientific Work of the Academies of Sciences of Union Republics and Branches (on Development of Researches on Highly Molecular Compounds) 21 June 1958. (Vest. Ak Nauk SSSR, 1958, No. 9, pp. 101-104)

Head of the Institute of Chemistry of Vegetable Materials of the AS Usbekskaya SSR

USMANOV, Kh.U.; YUL'CHIBAYEV, A.A.

Heats of wetting of cotton and synthetic fibers by water. Trudy SAGU no.134:85-94 '58. (MIRA 12:4)
(Heat of wetting)

USMANOV, Kh.U.; MURASHKINA, I.I.

Changes in the molecular weight of cotton cellulose. Trudy SAGU no.134:95-128 '58. (MIRA 12:4)
(Cellulose) (Polymerization)

KARGIN, V.A.; USMANOV, Kh.U.; AYKHODZHAYEV, B.I.

Obtaining graft polymers by cellulose ozonation. Vysokom.soed. 1 no.1:149-151 Ja '59. (MIRA 12:9)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova i Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Polymers) (Cellulose)

CATEGORY : Cultivated Plants. Commercial. Oleiferous. Sugar-Bearing.

U.S.S.R. JOUR : Ref Zhur-Biologiya No. 5, 1958 No. 19900

AUTHOR : Yamanov, Kh.U.

INST. : AS Uzbek SSR

TITLE : Findings and Prospective Studies in Cellulose: Research in Cotton Fiber.

ORIG. PUB. : V sb.: Materialy Mezhresp. soveshchaniya po koordinatsii nauchno-issled. rabot po khlopkovodstvu, 1957, g. Tashkent, AN UzSSR, 1957, 141-145

ABSTRACT : Research into cotton fiber cellulose during its development was conducted by the Institute of Chemistry of Plant Raw Material of the Academy of Sciences Uzbek SSR. It was determined that cellulose appears in the fiber during the 2nd to 3rd day of its development. In the early development stages of the fiber, the molecular weight of the cellulose is very low. During the first few days it increases gradually, on the 15th day the degree of polymeriza-

CARD: 1/6

COUNTRY :
SUBJECT : Cultivated Plants

ABS. JOUR.: Ref Zhur-Biologiya, No. 5, 1959, No. 23390

Author :
Inst. :
Title :

ORIG. PUB.:

ABSTRACT : tion rises sharply. After the fiber matures the molecular weight of the cellulose ceases to grow. In view of the fact that the opened bolls do not necessarily coincide with actual ripening of the fiber, the author suggests that in especially responsible instances (in selection, etc.) the molecular weight of the cellulose in the fiber be consulted as the index to the maturity of the cotton. It was discovered that as the fiber is ripens,

CARD : 2/6

C [illegible] : Cultivated Plants.

[illegible] JOU[illegible] : [illegible]

AUTHOR :
INST. :
TITLE :

SOURC. PUB.:

ABSTRACT : the cellulose fraction with high molecular weight increases, while the fraction with low molecular weight is diminished; this provides a reason for assuming that the synthesis of cellulose in cotton fiber is a polycondensation rather than polymerization process. The stability of the cellulose during the first days of development is very low. As the fiber matures, it increases, thus producing a gradual rise in the strength of the

CARD: 3/6

Cultivated Plants.

SOURCE: Ref Zhur -Biologiya, No. [illegible], [illegible]; No. of Pub.

AUTHOR :
TEXT :
TITLE :

PUB. DATA:

ABSTRACT : fiber. A thermodynamic method has been developed for direct determination of the density of the cellulose structure. It has been confirmed that the cellulose in cotton withstands photochemical destruction through the action of oxygen, which can take place when the open boll are exposed for a long while, resulting in a drop in fiber strength. The use of the regular phenomena observed in the development of cotton fiber in industrial synthesis gave

CARD : 6/6

AUTHOR :
INST. :
TITLE :

SOURCE : Cultivated Plants,

AGR. JOUR : Sel'skoe Khoz-Stva, No. 5, 1959, No. 27390

ORIG. PUB.:

ABSTRACT : ...ise to the possibility of producing artificial cellulose which will be less effected by water. Moreover, the Institute of Chemistry of Plant Raw Material of ... has worked out the technology of separating cotton wool from the seeds by means of H_2SO_4 and a method of deriving citric and malic acids from the leaves of the cotton plant. Research work is also now being conducted on the identification of the pigments which ...

CARD: 5/6

AUTHOR :
INST. :
TITLE :

SOURCE : ...ivated Plants.

AGR. JOUR.: Sel'skoe Khoz-Stva, No. 5, 1959, No. 27390

ORIG. PUB.:

ABSTRACT : in cotton fiber. --D.E. Vakhmistrov

CARD : 6/6

USMANOV, Kh.U.; professor

Basic methods for modifying the properties of cellulose. Khim. nauka i prom. 4 no.6:706-713 '59. (MIRA 13:8)
(Cellulose)

AZIMOV, S.A.; KALAYDZIDU, Ye.I.; KORDUB, N.V.; SLEPAKOVA, S.I.; USMANOV, Kh.U.

Determining the integral heat of wetting of natural silk irradiated with gamma rays. Dokl.AN Uz.SSR no.12:13-15 '59. (MIRA 13:5)

1. Fiziko-tekhnicheskiy institut AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Silk) (Heat of wetting) (Gamma rays)

USMANOV, Kh.U.; KHAKIMOV, I.Kh.

Heat of wetting of cotton cellulose in organic liquids. Uzb. khim. zhur. no.2:21-26 '59. (MIRA 12:7)

1.Chlen-korrespondent AN UzSSR (for Usmanov). 2.Institut rastitel'nykh veshchestc AN UzSSR.
(Cellulose) (Heat of wetting)

USMANOV, Kh.U.

Trends of scientific research in the Institute of Polymer Chemistry of the Academy of Sciences of the Uzbek S.S.R.
Uzb. khim. zhur. no.3:3-8 '59. (MIRA 12:9)

1.Institut khimii polimerov AN UzSSR, chlen-korrespondent AN UzSSR.
(Polymers)

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.

Graft polymers produced from natural rubber. Uzb. khim. zhur. no.3:20-23 '59. (MIRA 12:9)

1.Sredneaziatskiy gos.universitet im. V.I. Lenina. 2.Chlen-korrespondent AN UzSSR (for Usmanov).
(Polymers) (Rubber)

USMANOV, Kh.U.

All-Union conference on the Chemistry and Physics of Cellulose.
Uzb.khim.zhur. no.4:6-9 '59. (MIRA 13:1)

1. Chlen-korrespondent AN UzSSR.
(Cellulose--Congresses)

NIGMANKHODZHAYEVA, M.S.; USMANOV, Kh.U.

Change of mechanical and thermodynamic properties of cellulose in cotton plant fiber. Uzb.khim.zhur. no.4:22-28 '59.
(MIRA 13:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii rastitel'nykh veshchestv AN UzSSR.
(Cellulose) (Cotton)

USMANOV, Kh.U.; SHATKINA, V.P.

Absolute variation in the composition of the cotton fiber.
Dokl.AN Uz.SSR no.5:30-33 '59. (MIRA 12:8)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cotton)

USMANOV, Kh.U.; KHAKIMOV, I.Kh.

Heat of wetting of cotton cellulose and hydrated cellulose in organic liquids. Uzb.khim.zhur. no.5:30-33 '59.
(MIRA 13:2)

1. Chlen-korrespondent AN UzSSR (for Usmanov). 2. Institut khimii polimerov.
(Cellulose) (Heat of wetting)

USMANOV, Kh.U.; ZARIPOVA, A.M.

Chemical composition of naturally colored cotton fiber. Uzb.khim. zhur. no.6:28-33 '59. (MIRA 13:4)

1.Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Cotton)

USMANOV, Kh.U.; KURGUL'TSEVA, L.I.

Changes in the quality of sugars in fiber in proportion to the accumulation of cellulose. Dokl.AN Uz.SSR no.8:30-33 '59. (MIRA 12:11)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cotton)

USMANOV, Kh.U.; KHAKIMOV, I.Kh.

Heat of wetting in alcohol of cotton cellulose from variety 108-F at different growing periods. Dokl.AN Uz.SSR no.11: 32-34 '59. (MIRA 13:4)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov)
(Cotton) (Heat of wetting)

USMANOV, Kh.U.; MIKHAYLOV, N.V.; KOZLOV, P.V.

Tashkent All-Union Conference on the Chemistry and Physics of Cellulose. Vysokom. soed. 1 no.9:1439-1450 S '59. (MIRA 13:3)

(Tashkent--Cellulose--Congresses)

USMANOV, Kh.U.; AYKHODZHAYEV, B.I.; AZIZOV, U.O.

Preparation of graft polymers of cellulose by irradiation with Co^{60}. Vysokom.soed. 1 no.10:1570 O '59. (MIRA 13:3)

(Cellulose) (Polymers) (Cobalt--Isotopes)

15.9530

AUTHOR: Usmanov, Kh. U. (Professor)

TITLE: Basic Methods of Modifying the Characteristics of Cellulose

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 6, pp 706-713 (USSR)

ABSTRACT: Various means of changing the properties of the cellulose are reviewed in the article. The cellulose structure can be modified by means of mercerization or processing with amines, particularly with ethyl amine. The latter method still presents difficulties in its industrial application. The reduction of the hygroscopic properties of hydrate cellulose was the theme of several investigations (Z. G. Serebryakova, N. V. Mikhaylov. High-Molecular-Weight Compounds--Vysokomolekulyarnye soyedineniya--1959, Nr 2; same authors, Scientific Research Proceedings of the All-Union Scientific Research Institute for Paper and Cellulose--Nauchno-issledovatel'skiye trudy VNIIB--1958, Nr 4; ibid, 1959, Nr 4; Z. G. Serebryakova.

Card 1/4

Basic Methods of Modifying the
Characteristics of Cellulose

Dissertation. 1959) It was [illegible]
V. L. Karpov, Z. M. [illegible], Acta Physicochimica [illegible],
1957, Nr 7, p [illegible]; N. V. Mikhaylov, Dissertation,
1946) that the density of cuprion hydrate cellulose
can be considerably increased on prolonged heating
in water, glycerol, or other polar liquids. It was
also shown that heating freshly formed cellulose
xanthate fiber prior to regeneration in an alkali
bath leads to fuller solidification and improves
the characteristics of natural cotton fiber. Samples
of hydrate cellulose have been also obtained which
were analogous to cotton fibers with [illegible] X-ray
picture and adsorption capacity. Modification of
cellulose by means of replacement of hydroxyl groups
by other functional groups are noted. Among them,
the Institute of Polymer Chemistry of the Academy of
Sciences of UzbSSR in cooperation with the [illegible]
Textile Combine developed a method for obtaining
partially cyanoethylated fabrics. The method consists
in treating previously mercerized and [illegible]
fabric with acrylonitrile at [illegible]

Card 2/4

Basic Methods of Modifying the Characteristics of Cellulose

SOV/ [illegible]

This treatment [illegible] the cellulose and imparts the desired properties. A higher nitrogen content (above 5%) is detrimental. Partial cyanoethylation increases the stability and susceptibility to dyeing without [illegible] strength of the fabric. Graft copolymers were obtained with a new method (V. A. Kargin, Kh. [illegible], B. I. Aykhodzhayev, [illegible]) by treating cellulose with [illegible] acrylonitrile and viscose and with styrene [illegible] were thus obtained. As compared with [illegible] the adhesion of the polystyrene-cellulose polymer to SKB-30 rubber was increased by 32%, and the degree of polymerization of acrylonitrile in the side chain of the copolymer was 12 to 60. Several graft co[illegible] copolymers were obtained at the above-mentioned Institute by means of irradiation and ultrasound [illegible] require, however, further studies. Cross-linking reagents (methylol derivatives of urea, melamine, and [illegible], diisocyanates; compounds with [illegible] groups, etc.) and their application for wrinkle- and

Card 3/4

Basic Methods of Modifying the
Characteristics of Cellulose

crease-proofing [illegible] and fireproofing [illegible] have been little investigated [illegible] are 4 tables; and 96 references, 8 [illegible] U.K., 1 French, 2 German, 1 Hungarian, 13 Swiss [illegible] Report U.S. and U.K. references are: E. S. Orr, A. M. [illegible] F. A. Andrews, I. N. Grant, Text. Res. J., 25, 4, 349 (1955), ibid., 29, 7, 555 (1959); L. M. [illegible] ibid., 29, 4, 287 (1959); C. H. Fleming, I. [illegible] ibid., 28, 9, 769 (1958); S. F. [illegible], E. Pacsu, Ind. Eng. Chem., 47, 1, 91 (1955)

Card 4/4

U.SMANOV, KH. U.

PHASE I BOOK EXPLOITATION SOV/4984

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries) Section III. [Moscow, Izd-vo AN SSSR, 1960] 469 p. 55,000 copies printed.

Tech. Ed.: P. S. Kashina.

Sponsoring Agency: The International Union of Pure and Applied Chemistry. Commission on Macromolecular Chemistry.

PURPOSE: This book is intended for chemists interested in polymerization reactions and the synthesis of high molecular compounds.

COVERAGE: This is Section III of a multivolume work containing papers on macromolecular chemistry. The articles in general deal with the kinetics of polymerization reactions, the synthesis of special-purpose polymers, e.g., ion exchange resins, semiconductor materials, etc., methods of catalyzing polymerization reactions, properties and chemical interactions of high molecular materials, and the effects of various factors on polymerization and the degradation of high molecular compounds. No personalities are mentioned. References given follow the articles.

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USMANOV, KH.U.

PHASE I BOOK EXPLOITATION SOV/4984

International symposium on macromolecular chemistry. Moscow, 1960.

Mezhdunarodnyy simpozium po makromolekulyarnoy khimii SSSR, Moskva, 14-18 iyunya 1960 g.; doklady i avtoreferaty. Sektsiya III. (International Symposium on Macromolecular Chemistry Held in Moscow, June 14-18, 1960; Papers and Summaries) Section III. [Moscow, Izd-vo AN SSSR, 1960] 469 p. 55,000 copies printed.

Tech. Ed.: P. S. Kashina.

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USMANOV, Kh.U.; NIKONOVICH, G.V.

Electron microscope examination of structural changes in cotton fiber during the vegetation period. Uzb. khim. zhur. no.3:12-19 '60. (MIRA 13:10)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Cotton)

USMANOV, Kh.U.; PERLINA, R.V.

Determination of the aldehyde groups in cellulose by oxidation with potassium permanganate. Uzb. khim. zhur. no.3:20-28 '60. (MIRA 13:10)

1. Institut khimii polimerov, AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Formyl group)

ISKHAKOV, Sh.; USMANOV, Kh.U., BUKINA, V.K.

Treating cotton fibers with organic solvents to increase the friction force between separate fibers. Izv.vys.ucheb.zav.; tekh.tekst. prom. no.3:31-33 '60. (MIRA 13:7)

1. Tashkentskiy tekstil'nyy institut i Institut khimii polimerov AN UzSSR.
(Cotton yarn) (Solvents)

USMANOV, Kh.U.; NIKONOVICH, G.V.

Fibrillation of cotton cellulose. Uzb. khim. zhur. no.6:11-15 '60.
(MIRA 14:1)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Cellulose)

INOYATOV, N.Sh.; KHAKIMOV, I.Kh.; USMANOV, Kh.U.

Thermodynamic functions of water and methanol when sorbed by cotton cellulose and cellulose hydrate. Uzb. khim. zhur. no.6: 16-20 '60. (MIRA 14:1)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Thermodynamics)
(Methanol)

USMANOV, Kh.U.; KARGIN, V.A.; AYKHODZHAYEV, B.I.; INOYATOV, N.Sh.

Upgrading of cotton cord by means of ozonization. Vysokom. soed. 2 no.1:88-91 Ja '60. (MIRA 13:5)

1. Institut khimii polimerov AN UzSSR.
(Ozone) (Cotton)

88535

S/190/60/002/010/003/026
B004/B054

15.8600

AUTHORS: Azimov, S. A., Usmanov, Kh. U., Kordub, N. V., and Slepakova, S. I.

TITLE: The Grafting of Some Monomers on Silk and Caprone by Means of Gamma Rays

PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 10, pp. 1459-1462

TEXT: The authors report on the grafting of acrylonitrile and styrene on silk and caprone under irradiation with gamma rays of Co^{60} with an activity of 1350 curies. A preliminary irradiation of fibers and a subsequent treatment with the monomers showed no result. When irradiating in monomeric solution, however, a weight increase (6 - 23%) of the fiber was observed which depended on the solvent applied (Table). With acrylonitrile and silk, an aqueous solution showed the best effect (23% weight increase), since it well moistens the silk. The grafting of acrylonitrile on caprone was carried out in aqueous-alcoholic solution, the grafting of styrene on caprone in ethanol (23 - 24% weight increase). The optimum irradiation dose was found to be $1 \cdot 10^6$ physical roentgen equivalents for the process.

Card 1/2

The Grafting of Some Monomers on Silk and Caprone by Means of Gamma Rays

88535
S/190/60/002/010/003/026
B004/B054

A higher dose does not produce any further increase in weight of the fiber. The introduction of new chemical groups into the fibers was proved by means of an MK-12 (IK-12) infrared recording spectrometer (Figs. 1, 2). The grafted silk and caprone showed the characteristic 2270 cm^{-1} band of the C≡N bond. On the basis of the change in viscosity of fibroin in copper-ammonia solution due to irradiation (Fig. 3) and the increase in moistening heat (Fig. 4), the authors assume a rupture of the principal chain of fibroin and a reduction in the packing of the macromolecules. The absorption bands corresponding to the hydrogen bonds of the CO-NH groups (3080 and 3300 cm^{-1}), however, remain unchanged even after intensive irradiation (Fig. 5). There are 5 figures, 1 table, and 3 references: 2 Soviet and 1 US.

ASSOCIATION: Fiziko-tekhnicheskiy institut (Institute of Physics and Technology). Institut khimii polimerov AN UzSSR (Institute of the Chemistry of Polymers of the AS Uzbekskaya SSR)

SUBMITTED: January 8, 1960

Card 2/2

3L899
S/081/62/000/003/090/090
B161/B101

11.2210
15.8010

AUTHORS: Usmanov, Kh. U., Aykhodzhayev, B. I., Azizov, U.

TITLE: Production of grafted copolymers of cellulose by Co^{60} irradiation

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 3, 1962, 648, abstract 3R81 (Tr. Tashkentsk. konferentsii po mirn. ispol'zovaniy atomn. energii, 1959, v. I. Tashkent, AN UzSSR, 1961, 295-298)

TEXT: Cotton cellulose cleaned by boiling in 2% NaOH solution was treated with acrylonitrile (AN) to obtain grafted copolymers. Initiation was effected by Co^{60} γ-irradiation at the rate of 25.10^4 r/hr. The reaction was performed in water, ethanol and benzene. The maximum amount of grafted AN groups (N content 8.56%) was obtained in water where the cellulose to AN ratio in the initial mixture was 1:2 and the integral dose 10^6 r. [Abstracter's note: Complete translation.]

Card 1/1

33121
S/638/61/001/000/051/056
B125/B104

15.8620

AUTHORS: Usmanov, Kh. U., Tillayev, R. S., Musayev, U. N., Tursunov, D.

TITLE: Polymerization and synthesis of graft polymers from natural rubber and from polystyrene by gamma irradiation

SOURCE: Tashkentskaya konferentsiya po mirnomy ispol'zovaniyu atomnoy energii. Tashkent, 1959. Trudy. v. 1. Tashkent, 1961, 298-302

TEXT: The synthesis of graft polymers from natural rubber with vinyl chloride and from polystyrene with acrylonitrile and their properties were studied and the synthesis of homopolymers by radiation polymerization of acrylonitrile, vinyl chloride, and furfuryl alcohol have been investigated. The radiation polymerization of ethylene and of vinyl polymers was studied at the laboratory of the Academician S. S. Medvedev and by A. Shapiro (Khimiya i tekhnologiya polimerov, 1,1,1958). Regnier's method (Petrov, G. K., Tekhnologiya sinteticheskikh smol i plasticheskikh mass (Technology of synthetic resins and plastics), M.-L., Goskhimizdat, 1946,

Card 1/4 3

Polymerization and synthesis ...

p. 329) was used to obtain vinyl chloride, from chemically pure dichloro ethane by Co^{60} gamma irradiation of $0.5 \cdot 10^6$-$5 \cdot 10^6$ r. Ampoules filled with a mixture of natural rubber and vinyl chloride were irradiated at the laboratoriya Fiziko-tekhnicheskogo instituta AN UzSSR (Laboratory of the Physicotechnical Institute, AS Uzbekskaya SSR). The polymer resulting from gamma irradiation is not soluble, but swells slightly in some solvents (benzene, toluene, carbon tetrachloride, methylene chloride) and some solvent mixtures. The polymer obtained by grafting and irradiation has a more strongly ramified chain than the original rubber with a netlike structure resistant to solvents. The maximum amount of absorbed liquid per gram of polymer and the swelling rate constant drop a little with increasing dose. The data contained in the figure were recorded with a dynamometric balance of V. A. Kargin and T. I. Sogolova (ZhFKh, 1949, 23, 5, 530). All graft polymers from natural rubber and vinyl chloride are more heat-resistant than the initial rubber. The mechanical properties and the electrical insulating quality of additionally vulcanized grafted rubber meet the ГОСТ (GOST) requirements on insulating rubber for the cable industry. The graft polystyrene polymer with acrylonitrile was produced by gamma irradiation ($1 \cdot 10^6$-$4 \cdot 10^6$ r) of a swelled polystyrene film. The amount of nonreacting polystyrene and of the copolymer drops

with increasing radiation dose. The thermal resistivity of the initial and of the graft polymer is increased by the grafting of polystyrene with acrylonitrile. In addition, the graft polymer is more resistant to solvents than the initial polymer. Irradiation of acrylonitrile and vinyl chloride (starting material for the production of graft polymers) yielded polyacrylonitrile, polyvinyl chloride, and polyfurfuryl alcohol. There are 1 figure, 1 table, and 9 references: 3 Soviet and 6 non-Soviet. The four most recent references to English-language publications read as follows: Ballantine D. S., Mod. Plastics., 35, 171, 1957; Chapiro A. I., Polym. Sci., 29, 120, 321, 1958; Hammon H. G., S. P. E. Journal, 14, N3, 40, 1958.

ASSOCIATION: Tashkentskiy gosuniversitet im. V. I. Lenina (Tashkent State University imeni V. I. Lenin)

Fig. Deformation as a function of temperature. Legend: (1) natural rubber; (2) natural rubber + vinyl chloride, dose $1 \cdot 10^6$ r; (3) natural rubber + vinyl chloride, dose $2 \cdot 10^6$ r; (4) polystyrene; (5) polystyrene + acrylonitrile, dose $4 \cdot 10^6$ r; (A) deformation.

S/081/61/000/024/017/086
B 138/B102

AUTHORS: Usmanov, Kh. U., Iosilevich, A. I., Ioanidis, O., Chamayev, V.

TITLE: Effect of electric current on the exchange capacity of ion exchangers

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1961, 100, abstract 24B731 (Uzb. khim. zh., no. 2, 1961, 13 - 17)

TEXT: The effect of direct electric current on total exchange capacity was studied in the cationites, КУ-1 (KU-1), КУ-2 (KU-2), КБ-4-П2 (KB-4-P2) and anionites АН-2ф (AN-2F), АН-9ф (AN-9F), ЭДЭ-10П (EDE-10P), Н-О (N-O) and ММГ-1 (MMG-1). In the conditions under review electric current appeared to have no direct effect on the capacity of these resins. This means that ion exchange resins can be used in such electrochemical processes as sorption, concentration and desorption. In a number of cases it was found that, under the effect of the current, processes occurred which were related with ion discharge and gas formation. This caused variation in the exchange capacity of the ion exchangers. The results set out require some elaboration for the choice of ion exchangers

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Effect of electric current on the ... S/081/61/000/024/017/086
B138/B102

and conditions for chemical processes to be carried out on them.
[Abstracter's note: Complete translation.]

Card 2/2

USMANOV, Kh.U.; YAKUBOV, A.M.; MIRZAKARIMOV, R.M.; KUCHKAREV, A.B.

Effect of the Co^{60} gamma-irradiation of cottonseeds before sowing on the accumulation and chemical composition of cottonseed oil. Uzb.khim.zhur no.3:45-51 '61. (MIRA 14:11)

1. Institut khimii polimerov AN UzSSR i Sredneaziatskiy politekhnicheskiy institut. 2. Chlen-korrespondent AN UzSSR (for Usmanov).

(Cottonseed oil)
(Gamma rays)

21735

15.8000 2209, 1407, 1581 S/026/61/000/003/006/006
A166/A127

AUTHORS: Usmanov, Kh.U., Professor, Tillayev, R.S., Candidate of Chemical Sciences, and Musayev, U.N.

TITLE: A New Method of Changing the Properties of Polymers

PERIODICAL: Priroda, no. 3, 1961, 91-93

TEXT: The article deals with the uses of grafted and bloc copolymerization in modifying the properties of polymers. The Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AS Uzbekskaya SSR) has synthesized grafted copolymers of cellulose with acrylonitryl, styrol and other monomers. The grafting of styrol makes the surface of the cellulose waterrepellent, while the grafting of acrylonitryl makes for non-rotting, heat-resistant properties. These methods are at present only in the pilot-plant stage. Academican V.A. Kargin succeeded by treating polymers with oxygen or ozone, to obtain grafted copolymers of polystyrol and acrylic acid, and starch, styrol and methyl methacrylate. Under his direction a team

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A New Method of Changing the ... S/026/61/000/003/006/006
A166/A127

of Uzbek scientists has devised a method of treating cellulose with ozone to synthesize grafted copolymers of cellulose with acrylonitryl or with styrol and other monomers via their peroxide compounds. Mechanical processing is now widely used to break polymer bonds and form free radicals. Intensive friction between two discs of natural and synthetic rubber is used to produce copolymers which combine the strength and frostresistance of natural rubber with the oil- and petroleum-resistance of synthetic rubbers. Grafted copolymers are now being successfully synthesized under ionizing radiation. To reduce the solubility of polyvinyl alcohol, Hungarian scientists have synthesized under influence of X-rays a grafted copolymer of polyvinyl alcohol and methyl methacrylate.

ASSOCIATION: Sredneaziatskiy gosudarstvennyy universitet im. V.I. Lenina (Central Asian State University im. V.I. Lenin), Tashkent.

USMANOV, Kh.U.; PERLINA, R.V.

Determination of aldehyde and carboxyl groups in cellulose preparations. Uzb.khim.zhur. no.4:22-31 '61. (MIRA 14:8)

1. Institut khimii polimerov AN UzSSR. 2. Chlen-korrespondent AN UzSSR (for Usmanov).
(Cellulose) (Aldehydes) (Carboxyl group)

USMANOV, Kh.U.; NIGMANKHODZHAYEVA, M.S.; KHAKIMOV, I.; INOYATOV, N.

Effect of the time of defoliation of cotton plants on the mechanical and thermodynamic properties of cotton fiber. Uzb.khim.zhur. no.5:21-26 '61. (MIRA 14:9)

1. Institut khimii polimerov AN Uzbekskoy SSR. 2. Chlen-korrespondent AN Uzbekskoy SSR (for Usmanov).
(Cotton)

USMANOV, Kh.U.; KALABANOVSKAYA, Ye.I; DAMOVSKIY, R.B.

Effect of γ-rays on the structure of cellulose fibers. Vysokom. soed,3 no.2:223-227 F '61. (MIRA 14:5)

1. Sredneaziatskiy gosudarstvennyy universitet imeni V. L. Lenina.
(Cellulose) (Rayon) (Gamma rays)

SUSHKEVICH, T.I.; USMANOV, Kh.U.

Inhomogeneity of cotton cellulose. Vysokom.soed. 3 no.3:359-362 Mr '61. (MIRA 14:6)

1. Institut khimii polimerov, AN UzSSR.
(Cellulose) (Cotton) (Molecular weights)

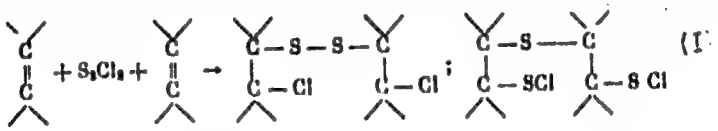
S/190/61/003/006/002/019
B110/B216

AUTHORS: Aykhodzhayev, B. I., Usmanov, Kh. U., Inoyatov, N. Sh., Zaurov, R. I.

TITLE: Cross-linking of hydrated cellulose fibers by means of sulfur monochloride

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 6, 1961, 806-810

TEXT: Rupture of not very flexible cellulose fibers occurs at points of specially weak molecular interaction. The influence of chemical cross-links between the chains of the cellulose molecules on the magnitude and uniformity of the strength of the fiber was studied. On vulcanization of crystalline polymers below their melting point by means of sulfur monochloride, cross-linking mainly occurs in the amorphous parts. Sulfur monochloride forms the following compounds with unsaturated linear polymers:



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S/190/61/003/006/002/019
B110/B216

Cross-linking of hydrated cellulose fibers...

In the presence of compounds with mobile hydrogen atoms (amines, amides, alcohols) sulfur monochloride reacts with the hydrogen atoms: $R-OH+S_2Cl_2 \longrightarrow R-O-S-S-Cl+KCl$ (II). Cross-linking of the cellulose molecules occurs in the following way: $cel-OH+S_2Cl_2+OH-cel \longrightarrow cel-O-S-S-O-cel+2HCl$ (III), mainly at losely packed points. Hydrated cellulose fiber in cord form, dried for 2 hr at 100°C (degree of polymerization 400-450) was treated with 2 and 5 ml of sulfur monochloride in dry benzene (198 and 95 ml) at 20°C. (1 g of S_2Cl_2 to 2 g of viscose cord, density of S_2Cl_2 = 1.65 g/cm^3). The mechanical and physicochemical properties of the viscose cord were tested after washing it 2-3 times with commercial benzene and drying it at 90-100°C. Break resistance and total deformation were tested at 25 and 100°C, sorption of steam at 25°C, sulfur content and deformation components at 25°C. Break resistance and breaking elongation measurements were made using a swing dynamometer with 2 scales: 0-10 kg and 0-30 kg, a compression length of 400 mm/min and an elongation rate of 300 mm/min. The 0.8-mm diameter cord fiber was first subjected to a stress of 70 g, and

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Cross-linking of hydrated cellulose fibers...

then tested for 24 hr at standard temperature and -humidity conditions. The total elongation l_{tot} was tested on a fiber of length l_v = 400 mm and applying a stress of 70 % of the mean strength, the residual elongation l_{plast} was determined after removing the load for 1 min from the fiber. The elastic deformation l_{el} in percent was obtained from $l_{el}/l_{tot} = \left[(l_{tot} - l_{plast})/l_{tot}\right] \cdot 100$. The mean strength, breaking elongation and components were averaged from 10 ruptures for each cord filament. According to tests , treatment with a 5 % S_2Cl_2 solution increases the strength by 15 % (from 9.7 to 11.1) and the elastic elongation from 1.47 to 1.89 and brings about a uniform distribution of the strength over the length of the cord. Strength variations of the initial cord from the mean value by 1.1 kg were reduced to 0.7 kg, and the elastic elongation was increased from 4.4 to 5.3 %. Since the S_2Cl_2 treatment has no effect on the sorptive properties, the increase of strength must be due to chemical cross-links, which prevent the sliding of macromolecules during elongation. The cross-links at points of weak molecular interaction effect

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uniformity of strength over the entire length. The reaction(III) was verified experimentally in the following manner: Primary and secondary cellulose acetate (γ = 180-200) were treated with 5 % S_2Cl_2 solution. This rendered the secondary cellulose acetate insoluble in acetone, while the primary compound remained soluble in methylene chloride. Even at 100°C, as illustrated by the data, the strength is increased, elongation slightly reduced, the sulfur content increased by 0.4 % (1 S atom to 100 cellulose units and 1 cel—O—S—S—O—cel bond to 100 glucose units), and dissolution decreased and decelerated, facts which all indicate the presence of cross links. Since side groups cel—O—S—S—Cl, cel—O—S—Cl which are not cross-linked, may also be present, there are more than 100 glucose units to each cross link. The considerable change in the mechanical properties produced by comparatively few cross links is explained by hydrogen bonds. The authors thank V. A. Kargin for discussing the results. There are 2 tables and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The two references to English-language publications read as follows: Ref. 6: S. Glaser, I. H. Schulmann, J. Polymer Sci. 14, 169, 1954. Ref. 7: I. H. Schulmann, S. Glaser, J. Polymer Sci. 14, 225, 1954.

S/190/61/003/006/002/019
Cross-linking of hydrated cellulose fibers... B110/B216

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry AS Uzbekskaya SSR)

SUBMITTED: March 21, 1960

Card 5/5

USMANOV, Kh.U.; YUL'CHIBAYEV, A.A.; NADZHIMUTDINOV, Sh.

Swelling process and packing density of natural cotton cellulose.
Vysokom.soed. 3 no.8:1217-1219 Ag '61. (MIRA 14:9)

1. Tashkentskiy gosudarstvennyy universitet imeni V.I.Lenina.
(Cellulose)

USMANOV, Kh.U., prof., doktor khim. nauk; NIKONOVICH, G.V.; BAKLITSKAYA, A.V., red.; KARABAYEVA, Kh.U., tekhn. red.

[Electron microscopy of cellulose] Elektronnaia mikroskopiia tselliulozy. Tashkent, Izd-vo Akad. nauk Uzbekskoi SSR, 1962. 262 p. (MIRA 15:7)

1. Chlen-korrespondent Akademii nauk Uzbekskoy SSR, Direktor Instituta khimii polimerov Akademii nauk Uzbekskoy SSR, rukovoditel' laboratorii fiziko-khimii tsellyulozy Instituta khimii polimerov Akademii nauk Uzbekskoy SSR (for Usmanov). 2. Institut khimii polimerov Akademii nauk Uzbekskoy SSR (for Nikonovich).

(Cellulose) (Electron microscopy)

ACCESSION NR: AR4015702 S/0081/63/000/023/0542/0542

SOURCE: RZh. Khimiya, Abs. 23S28

AUTHOR: Azizov, U.; Usmanov, Kh. U.; Putiyev, Yu. P.; Tashpulatov, Yu.

TITLE: Infrared absorption spectra of grafted copolymers of cellulose with certain vinyl monomers

CITED SOURCE: Sb. Fizika i khimiya.prirodn. i sintetich. polimerov. Vy*p. I. Tashkent, AN UzSSR, 1962, 29-34

TOPIC TAGS: spectroscopy, infrared absorption spectrum, polymer, polymer absorption spectrum, grafted copolymer, cellulose, cellulose copolymer, polyvinyl, radiopolymerization

TRANSLATION: By the method of radiation initiation of mixtures of cellulose with certain vinyl monomers, grafted copolymers of cellulose with methacrylate methylmethacrylate, methacrylamide, acrylonitrile and styrene were obtained and their infrared spectra were studied. In the spectrum of copolymers with methacrylate and methylmethacrylate, an intensive band appeared at 1730 cm^{-1} which corresponds to valence vibrations of a carbonyl group. At the low frequency end of the spectrum, characteristic absorption bands were obtained at 745 and 837 cm^{-1} for the copolymer with methacrylate and at 745 and 826 cm^{-1}

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ACCESSION NR: AR4015702

for the copolymer of methylmethacrylate. In the spectrum of the copolymer with methacrylamide, the intensity of absorption increased in the area of 3300 cm^{-1}, the band valence vibrations of C-H shifted from 2900 to the area of 2870 cm^{-1}, and bands appeared at 1663 cm^{-1}, (vibration of C = O in the group O = $C(NH_2)$, 1600 cm^{-1} (deformation vibrations of NH_2) and 1745 cm^{-1} (deformation vibrations of the CH_3 group in the methacrylamide). For the copolymer with acrylonitrile, a characteristic band at 2250 cm^{-1} appeared (valence vibrations of the nitrile group). The bands at 700 and 748 cm^{-1}, 1603 cm^{-1} (vibrations of the double bonds of an aromatic nucleus) and 1500 cm^{-1} (vibrations of the benzene ring) were the most reliable for the identification of the copolymer with styrene. The infrared spectra of the studied copolymers can be used for the qualitative evaluation of the degree of grafting.
A. Korobko

SUB CODE: OC DATE ACQ: 09Jan64 ENCL: 00

Card 2/2

USMANOV, Kh.U.; AZIZOV, U.

Graft cellulose copolymers with methacrylamide. Khim. i fiz.-khim. prirod. i sint. polim. no.1:18-23 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

AZIZOV,U.; USMANOV, Kh.U.

Certain properties of graft copolymers of cellulose with acrylonitrile. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 24-28 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

AZIZOV, U.;USMANOV, Kh.U.; PUTIYEV, Yu.P.; TASHPULATOV, Yu.

Infrared absorption spectra of copolymers of cellulose grafted by some vinyl monomers. Khim. i fiz.-khim. prirod. i sint. polim. no.1:29-34 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

USMANOV, Kh.U.; ZARIPOVA, A.M.; SUSHKEVICH, T.I.

Change in the physicochemical properties of cellulose during insolation. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 35-38 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

SADOVNIKOVA, V.I.; USMANOV, Kh.U.

Synthesis of acetylcyanoethylated cellulose and its properties. Khim. i fiz.-khim. prirod. i sint. polim. no.1:39-44 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

SADOVNIKOVA, V.I.; ZAUROV, R.I.; USMANOV, Kh.U.

Effect of cyanoethylation on the physical and mechanical properties of cotton fiber , yarn, and fabric. Khim. i fiz.-khim. prirod. i sint. polim. no.1:45-52 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

MININA, V.S.; USMANOV,: Kh.U.; ISHMUKHAMEDOVA, M.S.; LUBENETS, A.T.

Effect of ionized radiations on polysaccharides. Khim. i fiz.-khim. prirod. i sint. polim. no.1:53-60 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

USMANOV, Kh.U.; ZARIPOVA, A.M.

Insolation of the naturally colored cotton fiber. Khim. i fiz.-khim. prirod. i sint. polim. no.1:61-65 '62

(MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

MININA, V.S.; USMANOV, Kh.U.

Kinetics of hydrolysis of guza-paya hemicelluloses and cotton hulls. Khim. i fiz.-khim. prirod. i sint. polim. no.1:66-71 '62
(MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

MININA, V.S.; SARUKHANOVA, A. Ye.; USMANOV, Kh.U.

Chemical composition of dehydration hydrolyzates from furfurole production wastes. Khim. i fiz.-khim. prirod. i sint. polim. no.1:72-77 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

AKMAMEDOV,K.; NIKITINA, V.S.; USMANOV, Kh.U.

Hulls of naturally delinting cottonseeds is a valuable raw material for the hydrolysis industry. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 94-96 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

MININA, V.S.; SARUKHANOVA, A. Ye.; USMANOV, Kh.U.

Production of furfurole and levulinic acid in the hydrolysis of packed guza-payn. Khim. i fiz.-khim. prirod. i sint. polim. no.1:87-93 '62 (MIRA 17:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

POGOSOV, Yu.L.; SHAPOSHNIKOVA, S.T.; USMANOV, Kh.U.; AYKHODZHAYEV, B.I.

Production of carboxymethylcellulose from delinting cot nseeds. Khim. i fiz.-khim. prirod. i sint. polim. no.1:94-98 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

USMANOV, Kh.U. KOZIN, G.M.

Apparatus of the turbometric titration of polymer solutions.
Khim. i fiz.-khim. prirod. i sint. polim. no.1:99-104 '62
(MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

ACCESSION NR: AT4040808 S/3099/62/000/001/0205/0206

AUTHOR: Usmanov, Kh. U. ; Yul'chibayev, A. A.; Mukhamedzhanov, R. / Gordiyenko A. A./ Patenko A. A./ Dordzhin G. S./ ~~Yunk~~ Valiyev, A.

TITLE: Radiation polymerization of vinyl fluoride

SOURCE: AN UzSSR. Institut khimii polimerov. Fizika i khimiya prirodny*kh i sinteticheskikh polimerov, no. 1, 1962, 205-206

TOPIC TAGS: vinyl fluoride, polyvinylfluoride, radiation polymerization, benzoyl peroxide catalyst

ABSTRACT: The authors describe some of the results of a systematic study carried out at the Laboratoriya khimii polimerov Tashkentskogo gosuniversiteta (Laboratory of Polymer Chemistry, Tashkent State University) to determine the optimal conditions for the production of polyvinylfluoride. In this study, the reaction between acetylene and anhydrous hydrogen fluoride was carried out in the gas phase at 100-120C in the presence of mercury and barium chlorides absorbed on activated charcoal. The reaction mixture was cooled with the aid of dry ice to — 78C, and the monomer which condensed at this temperature was placed into glass ampules and irradiated with various doses of δ-rays from Co^{60}.

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ACCESSION NR: AT4040808

In the absence of a catalyst, significant polymerization was observed only at 15×10^6 r, yielding a waxy product. The presence of benzoyl peroxide accelerated the polymerization at radiation doses of $3-9 \times 10^6$ r, yielding solid products, which indicates that this reaction proceeds by a radical mechanism. Orig. art has: 1 table.

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AN UzSSR)

SUBMITTED: 00

SUB CODE: OC, MT

NO REF SOV: 000

ENCL: 00

OTHER: 003

Card 2/2

USMANOV, Kh.U.; TILLAYEV, R.S.; MUSAYEV, U.N.; KURBANOV, Sh.A.

Radiation-induced grafting of acrylonitrile into polyvinyl alcohol. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 207-214 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

BRONOVITSKIY, V. Ye.; USMANOV, Kh.U.; DUDNIKOVA, L.G.

Production of liquid lignin-furfurole resin and molding materials based on it. Khim. i fiz.-khim. prirod. i sint. polim. no.1: 234-241 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

BRONOVITSKIY, V. Ye.; USMANOV, Kh.U.; GUTNIK, M. Ya.

Chip borads from lignin- furfurole resins. Khim. i fiz.-khim. prirod. i sint. polim. no.1:242-252 '62 (MIRA 18:1)

1. Chlen-korrespondent AN UzSSR (for Usmanov).

S/844/62/000/000/082/129
D423/D307

AUTHORS: Usmanov, Kh. U., Tillayev, R. S. and Musayev, U. N.

TITLE: Copolymerization and grafting of sylvan under the action of γ radiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 484-489

TEXT: Copolymers of acrylonitrile and sylvan were obtained by the action of γ radiation from Co^{60} on various mixture ratios in sealed glass ampoules. It was shown that the yield of copolymer increased with increasing dosage and also with increasing acrylonitrile content. Physicochemical tests established that the copolymer consisted of soluble and insoluble portions. Chemical analysis and investigation of the ir spectra established the presence of nitrogen and the fact that it influenced the formation of copolymers. Investigation of the thermomechanical properties showed that the copolymers can exist in all three physical states. Radiation polymerization

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Copolymerization and grafting ... S/844/62/000/000/042/129
D/423/D307

of sylvan only took place in the presence of sensitizing solvents such as CCl_4 and $CHCl_3$. This was explained by the formation of free radicals by the solvents, thus initiating polymerization. Grafting polymerization was studied by using chlorinated polyvinyl chloride (perchlorvinyl) with a molecular weight of 51,640 and a chlorine content of 62.3%, mixed with sylvan in sealed glass ampoules and subjected to a γ dosage of 1 - 1.5 Mr. The results showed that in order to reduce the quantity of homopolymer formed the system must be chosen such that the basic polymer is more radiation-sensitive than the grafting monomer. Study of the physical properties of the grafted polymers obtained from sylvan and perchlorvinyl showed that lacquers were formed in a mixture of acetone and dichlorethane, which are stable to bending and to shock and which are also hydrostable. There are 4 figures and 2 tables.

ASSOCIATION: Tashkentskiy gosudarstvennyy universitet im. V. I. Lenina, khimicheskiy fakul'tet (Tashkent State University im. V. I. Lenin, Faculty of Chemistry)

Card 2/2

S/844/62/000/000/083/129
D423/D307

AUTHORS: Azimov, S. A., Kordub, N. V., Slepakova, S. I. and Usmanov, Kh. U.

TITLE: The study of grafted copolymers of natural silk and caprone obtained by means of γ irradiation

SOURCE: Trudy II Vsesoyuznogo soveshchaniya po radiatsionnoy khimii. Ed. by L. S. Polak. Moscow, Izd-vo AN SSSR, 1962, 490-496

TEXT: Acrylonitrile, styrene and methylmethacrylate were grafted to silk and caprone whilst subjected to γ irradiation from a 1350 curie Co^{60} source. Optimum radiation dosages were found to be 1×10^6 r for acrylonitrile and 5×10^6 r for styrene and methylmethacrylate, and the extent of grafting was found to depend on the concentration of monomer in the solvent. The nitrogen content of the grafted silk was somewhat reduced with increasing dosage. Analysis of the grafted copolymers was difficult because of their insolubi-

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lity in cuprammonium solution and other solvents. It was established that the wetting properties of the grafted polymers were better than those of the original fibers. Other properties investigated showed that the grafted copolymers are insoluble in the usual solvents and that the copolymer of silk and acrylonitrile is dyed better with vat dyestuffs. The integral heats of wetting are considerably reduced and the resistance to breakage of the fibers is increased. Evidence was found for the introduction into the macromolecule of silk of hydrophobic groups. Acrylonitrile and styrene grafted to a crepe-de-chine material produced a tougher and heavier fabric, unchanged in external appearances. There are 4 figures and 4 tables.

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AUTHOR: Bronovitskiy, V. Ye.; Usmanov, Kh. U.; Dudnikova, L. G.

TITLE: The production of liquid lignin-furfural resin and pressed materials based thereon

SOURCE: AN UzSSR. Institut khimii polimerov. Fizika i khimiya prirodny*kh i sinteticheskikh polimerov, no. 1, 1962, 234-241

TOPIC TAGS: pressed polymer, fibrous polymer, synthetic fiber, lignin, hydrolyzed lignin, lignin furfural resin, resin, furfural resin, cotton lignin, phenolic resin, phenolic formaldehyde resin

ABSTRACT: The natural polymer lignin has many possible industrial uses, but its structure is still not completely understood. In the present paper, the authors discuss the hydrolysis of cotton lignin with 15% alkali, the possibility of obtaining liquid and solid meltable resins, suitable for the manufacture of pressed materials, and the technique for pressing products from lignin-furfural resin and fibrous fillers. The authors found that hydrolysis of cotton lignin with 15% NaOH at a lignin: alkali ratio of 1:8 for 1.5-2 hours at 170C produced the highest amount of water-soluble compounds and small amounts of sediment. Prolongation of this

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process caused polycondensation of the water-soluble products. After alkali hydrolysis the material was cooled to 70C, followed by addition of furfural to a lignin: furfural ratio of 1:5 based on the dry weight of lignin. The polycondensation of the mixture lasted 65-90 minutes, after which it was cooled to 45 - 50C and acidified with 20% HCl to a weakly acid solution. The precipitated resin was washed with water, and after cooling it was ready for the preparation of fibers. The technology developed for the preparation of a compressible product was as follows: resin with a moisture content of 23-27% was put in rollers and mixed with a saturated solution of urotropine. A cryanide-impregnated foam was then added and the mixture was rolled to a thickness of 4-5 mm at 5-60C for 10-15 minutes. If there was more than 3% moisture, the mixture was dried for 2-3 hours at 60C. To decrease the water-absorbing properties and improve the physico-mechanical properties, the mixture was mixed with rubber or phenolic and urea-formaldehyde resins. The best results were obtained with the addition of 15% (calculated on the basis of dry weight) of phenolic-formaldehyde resin No. 18. This decreased the water absorbing properties from 0.85 to 0.5 and increased the compressive strength from 1250 to 1500 kg/cm^2. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Institut khimii polimerov AN UzSSR (Institute of Polymer Chemistry, AN UzSSR)

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